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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/482,229	01/13/2000	Raymond Rubacha	10205.023	6709

			EXAMINER
7590	12/16/2004		SINGH, RAMNANDAN P

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Scottsdale, AZ 85254

ART UNIT	PAPER NUMBER
2644	

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/482,229	RUBACHA ET AL.
Office Action Summary	Examiner	Art Unit	
	Ramnandan Singh	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _19 July 2004_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
     closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-4 and 13-15_ is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4 and 13-15_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

       1.☐ Certified copies of the priority documents have been received.

       2.☐ Certified copies of the priority documents have been received in Application No. _____.

       3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
           application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments filed on July 19, 2004 have been considered but are moot

in view of the new ground(s) of rejection.

2.   **Status of Claims**

Claims 1, 3, 13, 14 are <u>amended</u>.

Claims 5-12 are <u>cancelled</u>.

Claims 1-4, 13-15 are <u>pending.</u>

3.   **Change of Scope**

With the amendment to the claims, a new search for prior art has been

necessitated. As a result, new grounds of rejection are made.

Claim Rejections - 35 USC § 103

4.   The text of those sections of Title 35, U.S. Code not included in this action can

be found in a prior Office action.

5.   Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Lubbe et al [US 6,111,965] in view of Futamase et al [US 4,267,763].

Regarding claim 1, Lubbe et al teach an audio signal processing circuit for

unobtrusively masking (i.e. **soft muting)** transient signals in an electronic device by

changing gain [col. 1, lines 11-15; col. 1, lines 28-40; col. 6, line 31 to col. 7, line 2; col. 7, lines 26-59; col. 8, line 20 to col. 9, line 11], as shown in Fig. 1, the circuit comprising:

an amplifier (15) having a first input for receiving control data via switch 23 [col. 5, lines 30-41; col. 4, lines 33-41] and a second input for receiving one of four different signals via switch 11 [col. 5, lines 18-29; col. 4, lin64 to col. 5, line 17];

Although Lubbe et al teach a control circuit 13 to generate control signals, they do not teach an accumulator comprising a register, and an adder. However, use of an accumulator in an electronic circuit is well-known in the art.

Futamase et al teach an accumulator 14 shown in Fig. 2, comprising

a register 143 having an output to provide a control signal;

an adder 141 having an output coupled the register 143 for storing data in the register and having a pair of inputs (see Fig. 2), the output of the register also being coupled to one of the pair of inputs (see Fig. 2), the second of the pair of inputs being coupled to a source of slope data (see Figs. 2, 1), the adder having a control input for adding or subtracting the slope data from the output of the register [Figs, 1, 2, 5; col. 5, lines 23-45; col. 10, line40 to col. 11, line 20; col. 11, lines 38-61; col. 15, line 11 to col. 17, line 64; col. 18, lines 28-33]. Although Futamase et al teach this accumulator in an electronic circuit to generate music, it is nevertheless a teaching to one of ordinary skill in the art to apply this accumulator to other electronic circuits.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide the accumulator of Futamase et al with Lubbe et al in order to suppress (or soft mute or offset) transient voltages caused by switching input signals in the electronic circuit. This is accomplished by applying a time-dependent output variable of the accumulator to control the gain of the amplifier of the electronic circuit of Lubbe et al wherein the time-dependent output variable of the accumulator varies with time at a rate corresponding to the time information of the transient wave [Futamase et al; col. 1, lines 7-38].

Regarding claim 2, Futamase et al further teach a sustain level mode for the control output of the accumulator [Fig. 6a; col. 7, line 59 to col. 9, line 27] that enables the gain of the amplifier of Lubbe et al to hold at a predetermined value.

Regarding claim 3, Lube et al further teach a summation circuit (i.e. **signal source selection circuit including selector switch 11**) coupled to the second input [Fig. 2; col. 5, lines 18-28].

Regarding claim 4, Lube et al further teach the summation circuit that includes logic for selecting one, all, or combination of signals (i.e. **control circuit 13**) from several inputs of summation [Fig. 2].

6.   Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Sullivan et al [US 4,659,876] in view of Lubbe et al [US 6,111,965] and further in view

of Futamase et al [US 4,267,763].

Regarding claim 13, Sullivan et al teach a telephone set, operated under a

phone switch 36 [Figs. 1-3], connected to a telephone loop, as shown in Fig. 4,

comprising:

    a phone switch (36) [Fig. 3; col. 5, lines 36-40);

    a mute button (34) [Fig. 3; col. 5, lines 29-35];

    a speaker with a variable amplifier [Fig. 4];

    a microphone [Fig. 4] and

    a set of band-pass filters (90).

Although Sullivan et al teach **a mute button** embedded with a mute circuit [Fig.

3; col. 5, lines 29-35], they do not teach explicitly a **soft mute** circuit needed to handle

switching between two input signals.

Lubbe et al teach a **soft muting circuit** [col. 1, lines 11-15; col. 1, lines 28-40;

col. 6, line 31 to col. 7, line 2; col. 7, lines 26-59; col. 8, line 20 to col. 9, line 11], as

shown in Fig. 1, characterized by:

an amplifier (15) having a first input for receiving control data via switch 23 [col. 5, lines 30-41; col. 4, lines 33-41] and a second input for receiving one of four different signals via switch 11 [col. 5, lines 18-29; col. 4, lin64 to col. 5, line 17];

Further, although Lubbe et al teach a control circuit 13 to generate control signals, they do not teach an accumulator comprising a register, and an adder. However, use of an accumulator in an electronic circuit is well-known in the art.

Futamase et al teach an accumulator 14 shown in Fig. 2, comprising

a register 143 having an output to provide a control signal;

an adder 141 having an output coupled the register 143 for storing data in the register and having a pair of inputs (see Fig. 2), the output of the register also being coupled to one of the pair of inputs (see Fig. 2), the second of the pair of inputs being coupled to a source of slope data (see Figs. 2, 1), the adder having a control input for adding or subtracting the slope data from the output of the register [Figs, 1, 2, 5; col. 5, lines 23-45; col. 10, line40 to col. 11, line 20; col. 11, lines 38-61; col. 15, line 11 to col. 17, line 64; col. 18, lines 28-33]. Although Futamase et al teach this accumulator in an electronic circuit to generate music, it is nevertheless a teaching to one of ordinary skill in the art to apply this accumulator to other electronic circuits.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art (i) to provide the **soft** mute circuit of Lubbe et al with Sullivan et al in

order to avoid switchover sounds in the loudspeaker output signal [Lubbe et al; col. 2, lines 33-44]; and (ii) further to provide the accumulator of Futamase et al with Lubbe et al in order to suppress (i.e. offset) transient voltages caused by switching between two input signals in the electronic circuit. This **soft muting** is accomplished by applying a time-dependent output variable of the accumulator of Futamase et al to control the gain of the amplifier of the electronic circuit of Lubbe et al wherein the time-dependent output variable of the accumulator varies with time at a rate corresponding to the time information of the transient wave [Futamase et al; col. 1, lines 7-38].

Regarding claim 14, the combination of Sullivan et al, Lube et al and Futamase et al teaches the telephone wherein the telephone includes a summation circuit (i.e. **signal source selection circuit including selector switch 11**) coupled to the second input [Lubbe et al; Fig. 2; col. 5, lines 18-28].

Regarding claim 15, the combination of Sullivan et al, Lube et al and Futamase et al teaches the telephone wherein the telephone includes a plurality of band pass filters (90), each of the band pass filters having an output coupled to the summation node [Sullivan et al; Fig. 4].

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(i) Trager et al [US 5,592,503] teach an accumulator (88) wherein the adder adds or subtracts the slope data [Fig. 6; col. 26, lines 44-64];

(ii) Perrott et al [US 6,008,703] teach a first-order accumulator shown in Fig. 8B and a pipeline accumulator in Fig. 9B [Figs. 8A, 9A, 9B; col. 16, lines 27-38; col. 17, lines 8-48];

(iii) Dierke teaches an audio decoder using soft muting [Figs, 1-5; Abstract]; and

(iv) Zuqert et al [US 6,466,832 B1] teach a telephone system including band pass filters (78) with combiner (76), and employing soft muting procedures Figs. 2, 7; col. 2, line 61 to col. 3, line 11; col. 10, line 54 to col. 11, line 7; col. 14, lines 61-67].

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Ramnandan Singh whose telephone number is

(703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone number

for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2644

FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER